

Evaluation of a Driver Training Intervention for People on the Autism Spectrum: A Multi-Site Randomized Control Trial

Authors : P. Vindin, R. Cordier, N. J. Wilson, H. Lee

Abstract : Engagement in community-based activities such as education, employment, and social relationships can improve the quality of life for individuals with Autism Spectrum Disorder (ASD). Community mobility is vital to attaining independence for individuals with ASD. Learning to drive and gaining a driver's license is a critical link to community mobility; however, for individuals with ASD acquiring safe driving skills can be a challenging process. Issues related to anxiety, executive function, and social communication may affect driving behaviours. Driving training and education aimed at addressing barriers faced by learner drivers with ASD can help them improve their driving performance. A multi-site randomized controlled trial (RCT) was conducted to evaluate the effectiveness of an autism-specific driving training intervention for improving the on-road driving performance of learner drivers with ASD. The intervention was delivered via a training manual and interactive website consisting of five modules covering varying driving environments starting with a focus on off-road preparations and progressing through basic to complex driving skill mastery. Seventy-two learner drivers with ASD aged 16 to 35 were randomized using a blinded group allocation procedure into either the intervention or control group. The intervention group received 10 driving lessons with the instructors trained in the use of an autism-specific driving training protocol, whereas the control group received 10 driving lessons as usual. Learner drivers completed a pre- and post-observation drive using a standardized driving route to measure driving performance using the Driving Performance Checklist (DPC). They also completed anxiety, executive function, and social responsiveness measures. The findings showed that there were significant improvements in driving performance for both the intervention ($d = 1.02$) and the control group ($d = 1.15$). However, the differences were not significant between groups ($p = 0.614$) or study sites ($p = 0.842$). None of the potential moderator variables (anxiety, cognition, social responsiveness, and driving instructor experience) influenced driving performance. This study is an important step toward improving community mobility for individuals with ASD showing that an autism-specific driving training intervention can improve the driving performance of learner drivers with ASD. It also highlighted the complexity of conducting a multi-site design even when sites were matched according to geography and traffic conditions. Driving instructors also need more and clearer information on how to communicate with learner drivers with restricted verbal expression.

Keywords : autism spectrum disorder, community mobility, driving training, transportation

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